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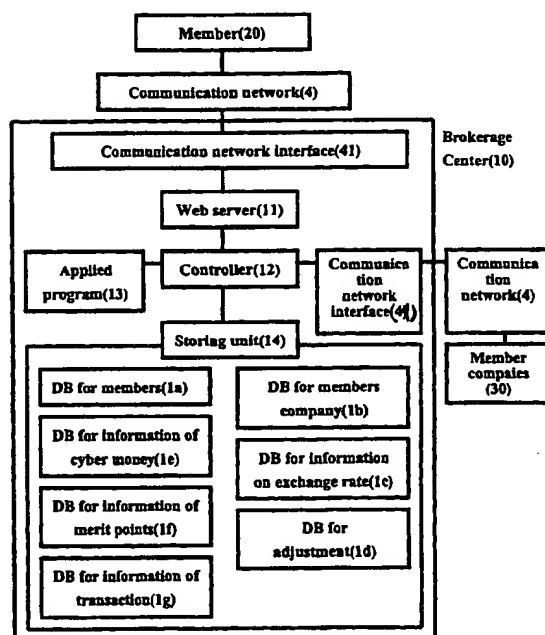
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(54) Title: METHOD AND SYSTEM FOR TRANSFER OR EXCHANGE OF MERIT POINTS IN ON-LINE SYSTEM



(57) Abstract: A process and system for exchanging the merit points in on-line system among the parties is provided, which comprises the member companies providing the members with the merit points, the members receiving the merit points from the member companies, and a brokerage center intermediating the transaction of the member's merit points between the member and the member companies. The brokerage center comprises: a communication program and a communication network interface; a web server to which a member can access and providing the member with a user interface; a storing unit for saving data of the information of the members, the member companies, the transactions, the exchange rate, the merit points and the cyber money; and a controller which analyzes and carries out each transaction requested by the members, extracts the information required for processing such transaction, saves the altered data resulting from the transactions, and sends the resulted data to the members and the member companies, with controlling the operation of the web server and the storing unit. The member has a terminal including a communication program and a communication network interface accessible to the brokerage center. And, the member company has a computer including: a communication program and a communication network interface accessible to the brokerage center; a storing unit in which the data of information on each members and their merit points can be saved; and a controller which analyzes and

carries out each transaction requested by the members, extracts the information required for processing such transaction, saves the altered data resulting from the transactions, with controlling the operation of the web server and the storing unit.

## METHOD AND SYSTEM FOR TRANSFER OR EXCHANGE OF MERIT POINTS IN ON-LINE SYSEM

5

### Background of the Invention

#### 1. Field of the Invention

The present invention relates to a method for transferring the merit points offered by a certain company to merit points or cyber money belonging to other companies, in particular, the method and system for sale and exchange various merit  
10 points via on-line in cyber space, by an appropriate exchange rate established between the cyber money and the merit points offered by each company.

#### 2. Description of the Related Art

The money has the following functions in general: saving of value, exchange  
15 of value, index of value. The merit points, the object of this invention, have such functions as saving of value and index of value. However, unless they exist in a certain minimum amount, they cannot be exchanged, and are therefore unlikely to be considered money. The purpose of this invention is to give such function as exchange of value to the merit points under 'minimum available limit' which can not  
20 be used, not corresponding to the certain degree, and then to give such advantages as discount and customer-attaining to customers and corporations respectively through money-like merit points.

Currently, the more the life cycles of products reach upside in many  
25 industries, and the product quality becomes uniform with universal and standardized manufacturing techniques, the more price and service competition becomes severe. Therefore, customers come to consider price and service as the important factor in purchasing products, and the corporations in turn come to regard price and service as

the most important indicators of competition. In such competitive market circumstances, corporations usually discount price competitively in order to secure their market, then find their operatory-profits decreasing. In the worse case, all related companies suffered losses as a result of adopting this strategy.

5

Such changed market circumstances have led corporations to consider individual customer not as a target of a sales campaign, but as an advocate. Reflecting this change, Data Base Marketing (DB marketing) based on customer information has developed. The corporation needs to maintain close relations with their customers who are their advocates. DB marketing is considered a measure for communicating with customers in a concrete manner. DB marketing has been used in a way identical to one-to-one marketing or relationship marketing, in a sense that all of them aim at a continuous relationship with the individual customer.

The corporations intend to find out customers' demand by collecting and analyzing data on them. The initial stage in this effort is frequent customer program.

Corporation have learned that the costs involved in selling a loyal customer one more product are much lower than those involving a first-time customer. In addition, research by corporations on selling expenses on the basis of their consumers brand name loyalty has revealed that sales to consumers who rank high in loyalty can result in higher corporate products. As a result, companies exert themselves to secure their own regular customers. For example, the company may collect and analyze customer information through the frequent customer program to determine the individual customer's demands. Using this information, the company then attempts to change potential customers into regular customers, and regular customers into advocates (customers who will invite others to buy the company's products) through one-to-one marketing. The merit point saving system has been developed to achieve this goal.

With the merit point saving system, a member can be offered convertible merit points or a reserve, or designated products, free gifts, money, or service and other benefits on the basis of the purchase record. Under this system, a 'member'

has the advantage of receiving some portion of his/her purchase record, as a rebate, from a 'member company', and a 'member company' can secure its own customers and prevent them from withdrawing.

The merit point saving system is usually categorized into the reward accrual  
5 program and the tiered reward program. First, according to the reward accrual program, a 'member' is to be offered some merit points to be rebated or converted on the basis of his card purchase record. Under this program, purchase record is usually tallied on a monthly basis, and the reward is offered based on this monthly calculation. For example, the following amounts will be rebated: conversion based on annual card  
10 purchase record at the prescribed ratio, or the amount of merit points to be converted upon purchase of a company's products on the basis of purchase record from a certain company's credit card. (a autocard by a car company) + a .

However, the said program has a shortcoming such as not presenting a clear  
15 attainment target to 'members'. For example, a 'member' does not have to intentionally increase purchase record because he or she can qualify for the reward as long as he or she is using the appropriate credit card. Furthermore, the above program cannot be responsive to the specific demands of individual members because it offers all 'members' identical reward in terms of the reward form and level.

20  
Second, according to the tiered reward program, a 'member' meaning only a person who reaches a certain record level, is to be offered a reward. Under this program, a 'member company' establishes several target levels and corresponding rewards, to be offered to 'members' who reach those levels. Many domestic  
25 corporations follow the above tiered reward program, which offers each reward to qualified members who reach a certain level in accordance with reserved merit points based on the member's record.

U.S. Patent No. 5,025,372 describes the methods and systems for  
30 management of the tiered reward program. Specifically, it explains how the system is to be managed, and how rewards are to be offered to a qualified 'member'. The

sponsor selects the expected reward level, and the rewards are determined by 'member's credits.

5 However, the said patent is defective in the sense that identical reward based on each level is already established. Therefore, members not interested in each offered reward are given no incentive for going into higher levels. In short, the said program is identical to the reward accrual program in the sense that neither program takes into account the demands of the individual member.

10 In light of the above defects, U.S. Patent No. 6,018,718 presents some solutions. It describes a method and system for offering rewards tailored to the individual member, focused on his specific demands. This distinguishes it from other program.

15 If this merit point reward system is strictly applied, it will have the following effects: the customer's transfer costs would increase artificially, consumers would often use the frequent customer program, and their brand name loyalty would increase. The corporation would be able to collect more data, and its sales profits would increase continuously.

20 However, application of this corporate merit point soon reached an impasse. The problem was that corporations were offering merit points even to customers who were making few purchases, in order to induce impulse buying or to obtain data on initial customers. As a result, most of the gifts were given not to impulse buyers, but  
25 to customers who had patiently accumulated merit points over a long period of time. Over the long run, customers had a tendency to stop buying products and using the frequent customer program. Corporations using the program found it difficult to secure regular customers, to obtain customer information, and to recover their operating costs.

30 The aforementioned patent on various reward programs or systems is helpful

in increasing members' records. This patent is focused on reward satisfaction degree based on individual demand. Actually, the above programs led to improve more purchases by members. However, these programs neglect the fact that the merit points and the reserve may be remain unused by members who purchase little, and thus fail to reach the required merit points and reserve level. These members tend not to use the merit card often, and the corporation has difficulty in securing their loyalty. Furthermore, these programs can cause members to overconsume in order to obtain more rewards.

10 In contrast, the member company faces a hardship in operating the programs under the tiered reward in the sense that the rewards except a reserve tend to increase excessively in accordance with members' saved merit points. For example, under airline mileage programs, the initial reward is simply to provide an airline ticket. However, when mileage points gradually accumulate and reach the highest level, such services as permanent seat class upgrade or free ticket for hotel can be offered as a reward.

Therefore, a system is needed under which the merit points can be freely and duly exchanged, sold or purchased in order to reduce opportunity cost arising from transfer of purchase place, improve purchaser's loyalty to the specific corporation and its brand, reduce the disadvantages involved in use of the merit points system, and earn profits for the corporation.

25 The object of the invention is to overcome the defects and problems of the aforementioned consumers' purchasing patterns, marketing strategies and the frequent customer programs based on the change of managerial circumstances, and provide a method for the establishment of a more practical system and the organization of networks between corporations.

30 Under this invention, the merit point exchange pool may be organized and composed of the selected companies which have already been using a merit point

system. Using this exchange pool, the merit points of one company can be exchanged with those of others.

Specifically, this invention provides a method by which the various merit  
5 points and reserves kept by a member as unused assets are transferred into usable assets, and provides member companies an opportunity to eliminate at a low cost any expected difficulties in existing programs.

#### Summary of the Invention

10 According to an aspect of the invention, a process for exchanging the merit points in on-line system among the parties comprising the member companies providing the members with the merit points, the members receiving the merit points from the member companies, and a brokerage center intermediating the transaction of the member's merit points between the member and the member companies is  
15 provided, which comprises the steps of:

a step in which a member access as a user to a web server of the brokerage center;

a step in which the member company providing the accessed member with the menu for referring to the user's merit points and/or the news of the general dealing  
20 information on sale or buying up of the merit points;

a step in which the member select a desired menu and request the selected transaction;

a step in which the brokerage center processes the transaction requested by the member;

25 a step in which the brokerage center store each information on the processed transaction, the altered merit points and the cyber money of the member;

a step in which the brokerage center informs the member of the information on the altered merit points and the cyber money of the member; and

a step in which the brokerage center send the information on the altered merit  
30 points of the member to the member company which provides the corresponding merit



points.

The process according to the invention may further comprises a step in which the brokerage center checks if the accesses member is the confirmed member.

5

In the practice of the process according to the invention, when a request was made for sales of an amount of merit points by a member, the brokerage center examines if the member requesting the transaction has enough amount or more and the corresponding kinds of merit points to be sold, on the other hand, when a request was made for buying the merit points, the brokerage center examines if the member requesting the transaction has enough amount or more and the kinds of merit points corresponding to the amount of merit points to buy, and as result of examination, if the amount of merit points is not enough, the brokerage center notifies the member that the transaction requested is not accomplished, and if the amount of merit points is enough, the brokerage center checks the propriety of the transaction in order to process the same.

In the practice of the process according to the invention, the information on the altered merit points and cyber money is either for an amount of the balance merit points resulted by deducting the merit points for sale from the saved amount, and an amount of cyber money corresponding to the price of the merit points for sale in case of transaction for sale; and for an amount of merit points to buy, and an amount of the balance merit points resulted by deducting the cyber money corresponding to the price of the amount of merit point to buy from the saved cyber money, in case of transaction for buying up. The cyber money corresponding to the price of each kinds of merit points may be determined on the basis of the predetermined exchange rate. Also, the exchange rate is predetermined by the dual rates for sale and for buying up. Accordingly, the predetermined rate of commission is to be lodged on each transaction for sale and buying up.

30

According to the process of the invention, when a user as a member of the

member company is given the additional merit points by the member company or receives the merit from the member company by using his merit points, the addition/deduction state of the member's merit points is immediately and automatically updated and recorded at the merit points-information site of the  
5 brokerage center.

According to the process of the invention, the member is a user who automatically became a member by firstly receiving the merit points from the member company, or who became a member by joining the member company with receiving  
10 the merit points.

The process according to the invention may further comprise an additional step of periodically carrying out an adjustment of every member's account on the increased or reduced amounts caused by the sale/buying transactions by checking the  
15 kinds and amounts of the stored merit points, and calculating the increased or reduced amounts of the potential costs caused by the corresponding sale/buying transactions which would be lodged to the member company. Immediately after processing the adjustment, the small amounts of cyber money and various kinds of merit points for carrying out the transaction are reserved.

20

According to an aspect of the invention, a system for carrying out the process of exchanging the merit points in on-line system among the parties comprising the member companies providing the members with the merit points, the members receiving the merit points from the member companies, and a brokerage center  
25 intermediating the transaction of the member's merit points between the member and the member companies is provided, in which the brokerage center comprises:

a communication program and a communication network interface;

a web server to which a member can access and providing the member with a user interface;

30 a storing unit for saving data of the information of the members, the member companies, the transactions, the exchange rate, the merit points and the cyber money;

and

a controller which analyzes and carries out each transactions requested by the members, extracts the information required for processing such transaction, saves the altered data resulting from the transactions, and send the resulted data to the members  
5 and the member companies, with controlling the operation of the web server and the storing unit.

Also, the member has a terminal including a communication program and a communication network interface accessible to the brokerage center, and the member  
10 company has a computer including:

a communication program and a communication network interface accessible to the brokerage center;

a storing unit in which the data of information on each members and their merit points can be saved; and

15 a controller which analyzes and carries out each transactions requested by the members, extracts the information required for processing such transaction, saves the altered data resulting from the transactions, with controlling the operation of the web server and the storing unit.

20 According to the system of the invention, the brokerage center further includes a program for the examination of the acceptability of transactions as requested, by which when a request was made for sales of an amount of merit points by a member, the brokerage center examines if the member requesting the transaction has enough amount or more and the corresponding kinds of merit points to be sold, on  
25 the other hand, when a request was made for buying the merit points, the brokerage center examines if the member requesting the transaction has enough amount or more and the kinds of merit points corresponding to the amount of merit points to buy, and as result of examination, if the amount of merit points is not enough, the brokerage center notifies the member that the transaction requested is not accomplished, and if  
30 the amount of merit points is enough, the brokerage center checks the propriety of the transaction in order to process the same.

In the system of the invention, the brokerage center further includes a data base of the merit points information, which can on-line exchange each merit points information contemporarily with the member company, and the member company's computer further includes an original data base storing each member's information and their merit points information, and an additional data base which is on-line contemporized with the member company and has a copied set of each member's information and their merit points information, and the information is delivered from the respective copied data bases of each member's information and their merit points information to the brokerage center

Also, the brokerage center further includes a data base for adjustment in order to save the increased/reduced amounts of merit points of a particular member company which were altered during the transactions, and thereby, use for the periodical adjustment. Therefore, immediately after processing the adjustment, the small amounts of cyber money and the various kinds of merit points for carrying out the transaction are reserved in the data base for adjustment.

The brokerage center further includes a program for adjustment in order to periodically adjust the increasement/decreasement of merit points provided by a particular member company, which were altered during the transactions, with referring to the data base for adjustment. And, the member company's computer further includes a unit for carrying out an operation of in-put of the altered information of each members, as well as a unit for carrying out the operation of in-put of the generation/extinguishments of each member's merit points.

#### Brief Description of the Drawings

Hereinafter the method and apparatus of this invention will be explained in detail in reference to the attached drawings.

FIG. 1 shows the relations of information delivery among the parties in each transaction according to a preferable example of the invention,

FIG. 2 and FIG. 4 shows the system according to a preferable example of the invention, which comprises a brokerage center, an individual member and a member company, respectively,

FIG. 3 displays the structure of the individual member's terminal,

FIG. 4 describes the computer of a member company,

FIG. 5 is a flow chart of processing of this invention with the above system and network,

FIG. 6 displays a case of processing the purchasing order from a member in the system, and

FIG. 7 describes a case of processing the buying order from a member in the system.

Above all, a user connects his PC to the Internet, for instance, and logs on to the web server of the brokerage center, by running a web browser installed in the PC. If the user is not a registered member, he will be asked to become one. Once he completes the registration, the authentication procedure for the membership will follow. When it has been completed, the brokerage center will give the user an electronic certificate of authentication. During future transactions, a member, through his PC, can use this certificate to enter the identification code of each member company involved. The brokerage center, having completed the authentication procedure for the member, and accepted his identification code, will send the identification code of the member to each member company concerned.

The member company receiving the member identification number verifies the transmitted member identification number with the individual member's information possessed by the member company. This is done through operating API programs or other applications before entering the merit point information DB. If the transmitted information of the member is identical to the company's member information, the member company will withdraw and transmit the merit point information of the particular member from the company's individual merit point information DB by again running API programs or other applications.

10 Detailed Description of the Invention

The parties using the invention are the member company providing the merit points, the individual member who is offered the merit points, and the brokerage center which acts as an intermediary dealings involving members' merit points.

15 This invention provides a method of exchanging merit points, related apparatus, and the following procedures: connection (the member logs onto a web server operated by the brokerage center); menu provision (the brokerage center offers the logging-on member a transaction menu on reference, sale, purchase of merit points); transaction requests (the member selects a menu and request a transaction);  
20 transaction performance (the center performs transaction at a member's request); changed matter saving (the center saves information on changes in a member's merit points or cyber money); member notification (the center notifies the member of the above changes); member company notification (the center notifies a merit point-offering member company of changed merit points).

25

The terms used in this invention are defined as follows:

The term 'Merit point/mileage system' is the arrangement by which corporation gives merit points to customers who purchase its products at an  
30 established rate, and offers such gifts as products or money to customers based on

their merit points. In some cases, the customers may also buy its products at bargain prices in proportion to their merit points.

5 The term 'Cyber money' means electronic currency, electronic check, electronic purse, or electronically transferred amounts which can be used in cyber space. It can be also a measure used in the purchase of products in electronic commerce transactions and exchanged with real currency. However, in this invention, it is more desirable to use cyber money to purchase member company's merit points.

10

The term 'member company' is a corporation which has agreed to offer service merit points for sale through an agreement with a brokerage center which will act as an intermediary in the exchange of merit points.

15

The term 'member' means a person who keeps the merit points offered by a member company and is qualified to use the above brokerage center.

20 The term 'Exchange rate' means amount of cyber money, the exchange unit, corresponding to one merit point unit, which can be established either in advance on the basis of the value of the merit points offered by the member company, or according to a fluctuating exchange rate based on the total recorded merit point transactions of the member company. Namely, the balancing system can involve either of the following: reducing the amount sold by reducing the merit point exchange rate for a member company which has sold many merit points, or reducing  
25 the purchasing amount by increasing that of merit points by a member company which bought many merit points.

30 In this invention, the information concerning the purchaser being offered the initial merit points by a company is sent to the brokerage center. And, the purchaser then becomes a member automatically, or he may instead chose to register his own information at his discretion and become a member after receiving the merit points

from the member company. One of these two options is to be selected depending upon what types of merit points are involved. However, in the former case, the member initially logging-on needs to determine his own password in order to use the brokerage center.

5

The member may order products by telephone (cell or wire) or the internet, or face-to-face from the staff at the brokerage center. In other words, the member is able to make such transactions as face-to-face, by telephone or ARS phone, or through various wire/wireless networks on-line.

10

In reference to FIG. 1, it shows the relations of information delivery among the parties in each transaction of this invention. When an individual member in a user pool purchases a product or service of a member company, the Member Company offers a certain amount of merit points to the individual member in proportion to the  
15 purchase amount. This merit point will be immediately stored in the merit point information DB. The individual member in possession of the merit point or cyber money may sell or buy his merit points through connecting to the brokerage center of this invention. At that time changes in the type and amount of merit points, or in the amount of cyber money are recorded into the merit point information DB, and the  
20 Member Company offering the merit point then is instantly notified of this. Also when an individual member, in possession of merit points by purchasing a product or service from member companies, or by purchasing them at the brokerage center, presents his merit points to the member company offering the merit points, the member company will accept such merit points in exchange for such benefits as  
25 products or money, and record the transaction into the merit point information DB. Therefore, each transacting party in transactions can instantly identify the change in merit points or cyber money.

FIG. 2 and FIG. 4 map the system of this invention for the brokerage center,  
30 an individual member, and a member company. The brokerage center, an individual member, and a member company can be interconnected through communication



networks such as the Internet. In general, these systems consist of the basic components of computers (not appearing in the FIG.s) such as memory devices like RAM and ROM, operating systems like DOS, Windows, Unix or Linux, clocks, etc. These systems operate based on PCs or workstation computers.

5

As shown in FIG. 2, the brokerage center of this invention is composed of communication programs and a communication network interface; a web server (11) which members log on to, and which provides the user interface; storage (14) where such data as individual members' information, member companies' information, transaction information, exchange rate information, and cyber money information are recorded; a controller (12) which regulates the communication programs, the communication network interface, the web server and the storage, and completes transactions by interpreting member's transaction requests, withdrawing necessary information, recording changed information as required, and notifying the individual member and the company member of the transaction result.

15

The storage is composed of 1) individual members' DB (1a) which keeps member's personal information and merit card information, etc, 2) member company's DB (1b) which keeps member company's information, 3) exchange rate information DB (1c) which keeps track of exchange rates, 4) computing DB (1d) which contains cost computation information, 5) cyber money information DB (1e) and merit point information DB (1f) which keep merit point or cyber money information of members, and 6) transaction information DB (1g) which records transaction information.

20

In practice, each apparatus of the brokerage center can be integrated into the web server (11) or can be placed into separate computers instead.

25

The controller is the CPU of computers, which performs application program operation, data management, storage referral & management, and computing.

30

The brokerage center (10) runs the feasibility-testing program. When an

individual member seeks to buy merit points, this program checks on whether that member has sufficient number of the kind of merit points he was desiring to sell. When a member wants to purchase merit points, this program asks if he has enough cyber money to afford the purchase amount of merit point. If not, this program notifies  
5 the member that 'The transaction is rejected'. If there is sufficient money, it completes the requested transaction. It enables the member with insufficient merit points or cyber money for the requested transactions to renew his transaction request.

While the brokerage center keeps the information regarding the changes in  
10 merit points to reflect the transactions among parties, it is also convenient for the brokerage center to maintain a computing DB (1d) so that it can periodically settle with member companies which offer merit points. Moreover, it is better for the brokerage center to install the computing program which automatically computes changes in member company obligations resulting from changes in merit points with  
15 the computing DB.

However, it is highly likely that the sale and purchase of merit points may not correspond. To prevent a transaction stoppage in such cases, it is advisable that the computing DB may deposit a certain amount of cyber money and several types of  
20 merit points at the end of the computing process.

The brokerage center of this invention holds more than 2 communication network interfaces to facilitate communication through the Internet. The communication network interfaces connect individual member's terminal and member  
25 company computers with the brokerage center.

FIG. 3 displays the structure of the individual member's terminal. The individual member maintains his terminal equipped with a communication network interface of communication programs like a web browser, a modem, and similar units.  
30 The terminal can be a general personal computer with the output device (15) of a monitor, a printer, etc, and the input device (16) of a keyboard, a mouse, etc.

An individual member is able to perform merit point transactions by logging on to the web server of the brokerage center through the communication network interface of his terminal.

5

FIG. 4 describes the computer of a member company. The computer of a member company includes a communication program and a communication network interface through which a member company can log on to the brokerage center, a storage which keeps the data of individual member's information and individual merit point information. In addition, it has a controller which regulates the communication program, the communication network interface and the storage, and which manages the data of individual members, their merit points, and other information from the transaction process.

15 To secure information, it is advisable that the member company computer holds the real-time synchronized duplicates of individual member's information DB and of merit point information DB, separately from the originals of individual members' information DB and of merit point information DB. The duplicate DB will deliver the information to the brokerage center.

20

A member company may also have to deal with situations in which an individual member may join or leave the Member Company, or in which an individual member merit points have increased or decreased. Thus the member information input device (17) and the merit point increase/decrease input device (18) will help the computer of the member company to track these changes in the individual member information and the merit point information. These input device (17)(18) may be run in an interface connected with other computers.

25 The merit point information DB for the management of individual member's merit point information is divided into 2 categories, individual merit point information DB managed and maintained by the company member concerned, and integrated merit

30

point information DB that manages members' merit points in the brokerage center. These DBs can operate in various ways. For instance, the brokerage center may build and maintain the integrated merit point information DB, or it may instead have the authority to refer to and manage the individual merit point information DBs of member companies real time when necessary. In either case, for information security, the duplicated DBs can be kept for reference separately from the original ones. The ways in which the integrated merit point information DB (hereinafter simply referred to as "merit point information DB") is constructed will be now explained in greater detail.

10

1) Merit point information DB in each member company

The API program builds the duplicate DBs of individual members. Upon changes in member's merit point information and information DBs, the brokerage center will transmit the changes to the duplicate DBs. The duplicate DBs will be synchronized real time with the original DBs. So no merit point information DBs for all the shared members will be constructed.

15

2) Merit point information DB of shared members in the brokerage center

The brokerage center duplicates and integrates the original DBs of member companies into one integrated merit point information DB. The merit point information DB of the brokerage center will be synchronized real time with the original DBs of each member company.

20

FIG. 5 is a flow chart of processing of this invention with the above system and network. For convenience, the web server of the brokerage center is designed to provide a transaction menu in the form of sequential questions for members who are logging on.

25

First, if a user (1) logs on to the brokerage center (10) of this invention through communication networks (4) like the internet, the controller determines whether the user is a member or not (Stage 102) by referring to the member DB. The

30

user may authenticate his membership by entering the member authentication number (which will vary depending upon member companies preference choice of an identification code, a card number, a registration number, an ID & password, etc.) If the user is identified as a member, the member will be asked whether he desires to sell or buy merit points (Stage 103).

When the member intends to sell merit points, he will be required to enter the type and amount of merit points for sale (Stage 104). This data will be compared to the merit point information of the member from the merit point information DB (Stage 105) in order to make sure there are sufficient merit points left of the type to be sold (Stage 106). If there are, they will be exchanged for cyber money. Upon the completion of the transaction, updated data reflecting the transaction will be delivered to the merit point information DB and the cyber money information DB. All this information will be provided to the Member Company concerned (Stage 107). Next, that member will be asked whether he desires other transactions (Stage 108). If so, the process will return to Stage 103 and if not, the process will end (Stage 109).

Also if a user is not a member at Stage 102, he will be asked whether he wishes to become one (Stage 114). If so, the user will be required to enter and record the member information (Stage 115) and will start the process at Stage 102.

A member buying merit points will be asked to enter the type and amount of merit points desired (Stage 110). These entries are then compared to the amount of that member's cyber money recorded for him in the cyber money DB (Stage 111) to determine whether he has sufficient cyber money with a particular member company (Stage 112). If he does, his cyber money will be exchanged for merit points. Account changes resulting from the transaction will be recorded in the merit point information DB and in the cyber money DB each, and notice of them will be sent to the member company involved. Then the member will be directed to Stage 108. If the member's cyber money is not sufficient for the transactions, the member will be advised to adjust the amount of purchase at Stage 103.

At each stage, authentication steps can be introduced in order to authenticate the logging-on members. Brower-based and other PKI-structured (Public Key Infrastructure; The International Agreement on Management of Public Key  
5 Cryptosystem and Authentication) authentication methods can be adopted. More advanced authentication methods may replace current ones.

Above all, a user connects his PC to the Internet, for instance, and logs on to the web server of the brokerage center, by running a web browser installed in the PC.  
10 If the user is not a registered member, he will be asked to become one. Once he completes the registration, the authentication procedure for the membership will follow. When it has been completed, the brokerage center will give the user an electronic certificate of authentication. During future transactions, a member, through his PC, can use this certificate to enter the identification code of each member  
15 company involved. The brokerage center, having completed the authentication procedure for the member, and accepted his identification code, will send the identification code of the member to each member company concerned.

The member company receiving the member identification number verifies  
20 the transmitted member identification number with the individual member's information possessed by the member company. This is done through operating API programs or other applications before entering the merit point information DB. If the transmitted information of the member is identical to the company's member information, the member company will withdraw and transmit the merit point  
25 information of the particular member from the company's individual merit point information DB by again running API programs or other applications.

Hereinafter, such ideas in implementing the method of this invention as exchange rates, the methods of real exchange, the methods of imposing commission,  
30 and methods of deriving accurate account of merit points and cyber money will be addressed specifically.

(1) Exchange Rate

Exchange Rate refers to the amount of cyber money equivalent to 1 merit point, that is an exchange unit. Member companies shall agree in advance on an exchange rate in terms of the reward value that each member company will recognize. For the simplest example, based on the assumption that the value of cyber money is equal to the value of Korean Won in the real world, if Company A provides gasoline at KW 10,000 corresponding to 1000 merit points given by the company, the merit point exchange rate of Company A is to be [KW 10000/ merit point 1000 = 10 cyber money/ merit point], if Company B provides a flight ticket for KW 600,000 corresponding to 30,000 merit points, the merit point exchange rate of Company B is to be [KW 600000/ merit point 30000 = 20 cyber money/merit point].

Both multiple exchange rates and single exchange rates are possible in determining the merit point exchange rate. A multiple exchange rate is a different setting of exchange rates for sells and purchases, whereas a single exchange rate is the same setting for both.

A multiple exchange rate is a setting that charges a member a higher price when purchasing merit points from a member company and when selling his or her merit points to the company that pays the member a lower price in than the appropriate value per merit point determined based upon the ratio between the unit cost of merit goods and the merit points necessary for obtaining such goods. For instance, Company A may dualize selling rate 9 cyber money/merit point and purchasing rate 11 cyber money/ merit point in the above example. The differences of cyber money arising out of this setting may be used to offset the management expenses of the brokerage center.

A single exchange rate is a setting that fixes same exchange rate at the appropriate value per merit point illustrated above, or a certain value per merit point determined by the company, which is the same for sales and purchases.

In addition, companies may adopt floating exchange rate systems that adjust the merit point exchange rates which are more likely sold lower and that of the merit points which are likely purchased higher. It is this system that changes the exchange rate for certain time unit based upon the sell/purchase ratio of each member company.

In this system, the mechanism is designed to adjust the level of sales and purchases by lowering the exchange rate of the likely-to-be-sale merit points and raising those of the likely-to-be-purchased merit points, linking the total amount of merit points converted to cyber money and the number for sale and for purchasing merit points of each company. In doing so, the companies shall set up a program to adjust their exchange rates of each and save floated exchange rate in the DB for exchange rate information. The program shall be open for companies to access and inquire, and to apply for transactions.

15

When applying a floating exchange rate system, the rate shall float in terms of the exchangeability of the variety of merit points owned by members and the profitability of member companies and brokerage centers. For instance, if a member owns some merit points of a certain company that are more likely to be actually rewarded, exchange rate for those merit points will be lower for selling and higher for purchasing.

20

## (2) Methods of Real Exchange

A member who accessed the brokerage center shall firstly inquire about the kind and number of merit points that he or she owns. Then, he or she shall request transactions as one inputs selling or purchasing or purchasing simultaneously with selling (hereinafter, "exchange").

25

Input information is viewed as cyber money on the computer screen through certain automatic calculations on Windows Applet provided from the webserver of

30



brokerage center to a member's PC. In case of selling merit points, it is to be [selling exchange rate \* number of selling merit points], in case of purchasing merit points, it is to be [purchase exchange rate \* number of purchase merit points]. In both cases, the calculated result is to be cyber money, but the only existing difference is that the increase and decrease marks, + and - shall be put in front. To make calculation convenient, suppose the single rate of 10 applied as both the selling and purchase exchange rates and assume that the member intends to sell or purchase 20 merit points. Then, he or she, in case of selling, recognizes there is an increase of 200 cyber money unit with the selling exchange rate, 10 multiplied by 20 merit points and in case of purchasing, there is decrease of 200 cyber money units with the purchasing exchange rate, 10 multiplied by 20 merit points.

By moderating a bit of the above-stated formula, conversion is done into merit points rather than cyber money. Then, it is derived in case of selling merit points, [amount of selling cyber money / selling exchange rate] and in case of purchasing merit points, [amount of purchasing cyber money / purchase exchange rate]. Thus, in the aforementioned example, a member can learn on the computer screen that when 200-cyber money increases, 20 merit points decreases and similarly when 200-cyber money decreases, 20 merit points increases.

20

In addition, in case that a member "checks" in the details of transaction, the data in the increase and decrease of cyber money and merit points are transmitted to the cyber money DB and the merit point-info DB respectively, and update data. Further, the details of the transaction are saved in the transaction-info DB. This process is controlled by the controller at the brokerage center with the controller functioning as Transaction Server.

25

### Order for Selling

In the attached plan, Do 6 illustrating an example of an order for merit point-selling according to the methods of this invention, a member determines the kind and

30

number of merit points that he or she intends to sell (Step 201), then places a sales order and transmits it to the web server at the brokerage center (Step 202). Following this, information on the selling order is transmitted to the controller, which first inquires the merit point-info DB of the member involved (Step 203) and then, checks  
5 if that member's accumulated merit points exceed the number of the current selling order made by the member (Step 204). If it is certain that the member owns more merit points than he or she desires to sell, the controller calculates cyber money equivalent to the number of selling merit points through the calculation formula, which is [selling exchange rate \* number of selling merit points] (Step 205). Then, it  
10 saves the calculated cyber money in the cyber money DB (Step 206). Information on the sold merit points is to be reported to the member company that provides the concerned merit points through the communication network, Interface (Step 207). The member company subtracts the transmitted data from the copied merit point DB or subtracts the number of the member's selling merit points from the merit point-info  
15 DB through the API Program.

#### Order of Purchasing

Referring to the attached plan, Do 7 illustrating an example of an order for merit  
20 point- purchasing according to the methods of this invention, the member who has requested information of his or her merit points and cyber money by accessing the web server of the brokerage center determines the kind and number of merit points that he or she intends to purchase (Step 301), then places a purchase order. The web server that received an order of the member transmits the data to the controller (Step  
25 302). The controller calculates (purchase exchange rate \* merit points in concern) corresponding to the member's order (Step 303) and calculates the cyber money necessary for the number of purchasing merit points. Thereafter, it is to check if the purchasing member possesses more cyber money than the amount calculated above (Step 305) by inquiring of cyber money-info DB (Step 304). To the extent that the  
30 member owns more cyber money than required for submitted purchasing order, it subtracts the necessary amount of cyber money from the cyber money DB (Step 306),

then reports the results to the member company providing the purchased merit points and has the company increase the merit points of the member in concern in the merit point-info DB (Step 307).

5                   Exchange

Depending on the occasion, members may sell "a" merit points and purchase "b" merit points simultaneously. But, according to the basic mechanism, selling of a merit points is completed first completed, and purchasing of b merit points is made  
10 next. However, in view of members, it is divided into two systems depending on whether or not going through a transiting phase (that is, the phase possessing cyber money by selling).

Explanation of the system including the transiting phase may be omitted, as it is  
15 that enables the above selling transaction and purchasing transaction to be made out of sequence.

The system without the transiting phase is the one that members can trade directly a merit points with b merit points. Members shall order his or her selling or  
20 purchasing merit points on his or her own PC. The brokerage center receiving an order is to calculate b merit points corresponding to the number of a merit points by the discount rate of mutual selling and purchasing between a-b merit points in terms of the formula, [(purchase exchange rate of b merit points) / (selling exchange rate of a merit points)]. It shall then report the decrease of a merit points to the member  
25 company A and the increase in b merit points to the member company B and help each member company update the merit point-info DBs. As a more detailed updating method, it inputs the received data and updates the copied merit point-info DB of the member company, or directly updates the merit point-info DB through the existing API program.

30

Indeed, any remaining a merit point less than 1 unit of b merit point shall

automatically be converted to cyber money or be left as a merit point in this process.

(3) Method of Imposing Commission

5       The brokerage center may by necessity impose required charges for mediating the exchange of merit points in each transaction. As methods of calculating such expenses, the brokerage center may employ the multiple exchange rate demonstrated earlier that the sets selling exchange rate and purchase exchange rate differently and reserves profit from difference to the brokerage center. Otherwise, the brokerage  
10       center may explicitly impose commissions for transactions.

Imposition of Commission by Multiple Exchange Rate

15       The commission in the process of selling and purchasing merit points is as follows.

20       When a member exchanges a merit points of member company A for merit points of member company B, C refers to the cyber money converted from a by the standard exchange rate (the exchange rate based on real value of a certain merit point) recognized as appropriate price of member company and b refers to the merit points of company B converted from C in terms of the standard exchange rate. In this case, the process of converting to cyber money, namely the commission in the process of selling is

25        $[C - (1 * \text{selling exchange rate})]$ .

      If  $(a * \text{selling exchange rate}) = c'$ , the process of converting cyber money to the merit points of company B, namely the commission in the process of purchasing is

30

$[b - (c' / \text{purchase exchange rate})]$ .

Consequently, the total commission in this selling and purchasing process is  $(C - c') + [b - (c' / \text{purchase exchange rate})]$ .

5

#### Imposition of Explicit Commission

When a member sells a merit points on his or her account, he or she shall convert a merit points to cyber money equivalent to [number of a merit points on sale \* exchange rate of a] = C. In this process, the member shall save the amount of cyber money in the cyber money-info DB, excluding [number of selling merit points \* commission rate of exchange], namely, the amount equivalent to  $[C - (\text{number of a merit points on sale} * \text{commission rate of exchange})] = C'$ .

15 In addition, when a member purchases a merit points equivalent to cyber money C, he or she is to purchase a merit points equivalent to  $[C / (\text{exchange rate of a merit point})] = [\text{number of a merit points on sale}]$ . In this case, commission of [number of purchase merit points \* commission rate of exchange] is to be subtracted from cyber money owned by the member concerned, or the number of a merit points excluding  
20 equivalent merit points thereto is to be saved in the merit point-info DB.

Such a commission imposing process is to be reported to a member through his or her PC so that he or she can be informed that a portion of his or her merit points or cyber money is subtracted following transactions.

25

Exchange commission may be imposed in either selling or purchasing process, or on both processes, and commission is to be calculated in the above way combining selling and purchasing calculations consecutively. However, in the case of imposing commissions on both selling and purchasing processes, commission rate to exchange  
30 is illustrated as follows.

When exchanging a merit points for b merit points, it is simplified as [a \* discount rate of exchange \* commission rate]. Therein, the discount rate of exchange refers to the mutual discount rate of selling / purchasing between a-b merit points in terms of [(purchase exchangerate of b) / (selling exchange rate of a)].

5

(4) Deriving Accurate Account of Merit Points & Cyber Money

As various kinds of merit points are exchanged, member companies may offer more merits than the total quantity that are actually floated, or vice and versa. Thus, the brokerage center is encouraged to design a system rewarding member companies that offered more merits with the leftover of the member companies that offered less merits than the total merit points they actually possess at regular period of time.

As a more detailed calculating method, there is a calculating system of direct exchange without involving cyber money. This method mutually calculates in balance the amount excluding difference arising out of discount rate by the details of transactions between member companies.

The other calculating method involves cyber money as below.

If a member intends to sell a merit points of the member company A and purchase b merit points of the member company B, a merit points are to be converted to certain amount of cyber money following the formula, [selling exchange rate \* number of selling merit points]. In this case, member company A writes off its future debts (the expenses to pay when a member demands reward of merit points) and thus, it shall pay the brokerage center cash c for the real value of the cyber money.

On the other hand, if a member intends to purchase the merit points of company B by spending cyber money, it is converted to merit point b', updated in the merit point-info DB of the company B and the company B's merit points of the

member concerned will be increased of  $b'$ . Thereby, the unexpected debt of company B is increased of  $b'$ . Member company B then shall make up for the amount of [number of purchase merit points / purchase exchangerate] and as a result, the brokerage center covers  $c'$  in cash equivalent to the real value of the above cyber money for company B.

C refers to cash that each member company pays for the writing-off of its debts and  $C'$  refers to cash that it is provided by the brokerage center for the accruing of its debts. Then, C shall be either larger than  $C'$  or equal to  $C'$  ( $C \geq C'$ ).  $C - C'$  in cash is equal to the sum of

Amount that a member possesses in cyber money converted from merit points, or  
Total amount that a member consumed in cyber money  
+  
Total amount of commission for merit point exchange

In theory,  $C = C'$ , perfect balance in calculation becomes possible when all members do not possess cyber money provided by the brokerage center and do not consume in cyber money and there is no commission for exchange.

Calculation is to be proceeded in form of balance calculation between member companies in a certain period. At the end of every month or in every 15 days, it is possible to make balance calculation about shortage/overage between member companies.

Due to the method of this invention, the consumers can exchange merit points of small amount and wide variety that are earned by diverse pattern of consumption for cyber money or different but one kind of merit points. As a result, they may take advantage of virtual merit in the early stage. In addition, the consumption of members are to the most possible extent concentrated on the companies whose merit

points are exchangeable and thus, it enables the companies selected as member companies to acquire a group of frequent customers, so-called "members". It consequently results in that those companies very likely become more competitive than other companies of the same kinds.

5



What is claimed is:

1. A process for exchanging the merit points in on-line system among the parties comprising the member companies providing the members with the merit points, the members receiving the merit points from the member companies, and a  
5 brokerage center intermediating the transaction of the member's merit points between the member and the member companies, which comprises the steps of:

a step in which a member access as a user to a web server of the brokerage center;

10 a step in which the member company providing the accessed member with the menu for referring to the user's merit points and/or the news of the general dealing information on sale or buying up of the merit points;

a step in which the member selects a desired menu and requests the selected transaction;

15 a step in which the brokerage center processes the transaction requested by the member;

a step in which the brokerage center stores each information on the processed transaction, the altered merit points and the cyber money of the member;

20 a step in which the brokerage center informs the member of the information on the altered merit points and the cyber money of the member; and

a step in which the brokerage center sends the information on the altered merit points of the member to the member company which provides the corresponding merit points.

25 2. The process for exchanging the merit points among the members in on-line system according to Claim 1, further comprising a step in which the brokerage center checks if the accesses member is the confirmed member.

30 3. The process for exchanging the merit points among the members in on-line system according to Claims 1 or 2, in which when a request was made for sales of an amount of merit points by a member, the brokerage center examines if the member

requesting the transaction has enough amount or more and the corresponding kinds of merit points to be sold, on the other hand, when a request was made for buying the merit points, the brokerage center examines if the member requesting the transaction has enough amount or more and the kinds of merit points corresponding to the amount of merit points to buy, and as result of examination, if the amount of merit points is not enough, the brokerage center notifies the member that the transaction requested is not accomplished, and if the amount of merit points is enough, the brokerage center checks the propriety of the transaction in order to process the same.

10           4. The process for exchanging the merit points among the members in on-line system according to Claims 1 or 2, in which the information on the altered merit points and cyber money is either for an amount of the balance merit points resulted by deducting the merit points for sale from the saved amount, and an amount of cyber money corresponding to the price of the merit points for sale in case of transaction for sale;  
15           and for an amount of merit points to buy, and an amount of the balance merit points resulted by deducting the cyber money corresponding to the price of the amount of merit point to buy from the saved cyber money, in case of transaction for buying up.

20           5. The process for exchanging the merit points among the members in on-line system according to Claims 1 or 2, in which the cyber money corresponding to the price of each kinds of merit points is determined on the basis of the predetermined exchange rate.

25           6. The process for exchanging the merit points among the members in on-line system according to Claims 1 or 2, in which the exchange rate is predetermined by the dual rates for sale and for buying up.

30           7. The process for exchanging the merit points among the members in on-line system according to Claims 1 or 2, in which a predetermined rate of commission is lodged on each transaction for sale and buying up.

8. The process for exchanging the merit points among the members in on-line system according to Claims 1 or 2, in which when a user as a member of the member company is given the additional merit points by the member company or  
5 receives the merit from the member company by using his merit points, the addition/deduction state of the member's merit points is immediately and automatically updated and recorded at the merit points-information site of the brokerage center.

10 9. The process for exchanging the merit points among the members in on-line system according to Claims 1 or 2, in which the member is a user who automatically became a member by firstly receiving the merit points from the member company, or who became a member by joining the member company with receiving the merit points.

15 10. The process for exchanging the merit points among the members in on-line system according to Claims 1 or 2, further comprising a step of periodically carrying out an adjustment of every member's account on the increased or reduced amounts caused by the sale/buying transactions by checking the kinds and amounts of  
20 the stored merit points, and calculating the increased or reduced amounts of the potential costs caused by the corresponding sale/buying transactions which would be lodged to the member company.

25 11. The process for exchanging the merit points among the members in on-line system according to Claim 10, in which immediately after processing the adjustment, the small amounts of cyber money and various kinds of merit points for carrying out the transaction are reserved.

30 12. A system for carrying out the process of exchanging the merit points in on-line system among the parties comprising the member companies providing the members with the merit points, the members receiving the merit points from the

member companies, and a brokerage center intermediating the transaction of the member's merit points between the member and the member companies, in which the brokerage center comprises:

a communication program and a communication network interface;

5 a web server to which a member can access and providing the member with a user interface;

a storing unit for saving data of the information of the members, the member companies, the transactions, the exchange rate, the merit points and the cyber money; and

10 a controller which analyzes and carries out each transactions requested by the members, extracts the information required for processing such transaction, saves the altered data resulting from the transactions, and send the resulted data to the members and the member companies, with controlling the operation of the web server and the storing unit.

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13. The system for carrying out the process of exchanging the merit points among the members in on-line system according to Claim 12, in which the member has a terminal including a communication program and a communication network interface accessible to the brokerage center.

20

14. The system for carrying out the process of exchanging the merit points among the members in on-line system according to Claim 12, in which the member company has a computer including:

25 a communication program and a communication network interface accessible to the brokerage center;

a storing unit in which the data of information on each members and their merit points can be saved; and

30 a controller which analyzes and carries out each transactions requested by the members, extracts the information required for processing such transaction, saves the altered data resulting from the transactions, with controlling the operation of the web server and the storing unit.

15. The system for carrying out the process of exchanging the merit points among the members in on-line system according to any one of Claims 12 to 14, in which the brokerage center further includes a program for the examination of the acceptability of transactions as requested, by which when a request was made for sales of an amount of merit points by a member, the brokerage center examines if the member requesting the transaction has enough amount or more and the corresponding kinds of merit points to be sold, on the other hand, when a request was made for buying the merit points, the brokerage center examines if the member requesting the transaction has enough amount or more and the kinds of merit points corresponding to the amount of merit points to buy, and as result of examination, if the amount of merit points is not enough, the brokerage center notifies the member that the transaction requested is not accomplished, and if the amount of merit points is enough, the brokerage center checks the propriety of the transaction in order to process the same.

15

16. The system for carrying out the process of exchanging the merit points among the members in on-line system according to any one of Claims 12 to 14, in which the brokerage center further includes a data base of the merit points information, which can on-line exchange each merit points information contemporarily with the member company.

20

17. The system for carrying out the process of exchanging the merit points among the members in on-line system according to any one of Claims 12 to 14, in which the member company's computer further includes an original data base storing each member's information and their merit points information, and an additional data base which is on-line contemporized with the member company and has a copied set of each member's information and their merit points information, and the information is delivered from the respective copied data bases of each member's information and their merit points information to the brokerage center

30

18. The system for carrying out the process of exchanging the merit points

among the members in on-line system according to any one of Claims 12 to 14, in which the brokerage center further includes a data base for adjustment in order to save the increased/reduced amounts of merit points of a particular member company which were altered during the transactions, and thereby, use for the periodical adjustment.

5

19. The system for carrying out the process of exchanging the merit points among the members in on-line system according to Claim 18, in which immediately after processing the adjustment, the small amounts of cyber money and the various kinds of merit points for carrying out the transaction are reserved in the data base for  
10 adjustment.

20. The system for carrying out the process of exchanging the merit points among the members in on-line system according to Claims 18 or 19, in which the brokerage center further includes a program for adjustment in order to periodically  
15 adjust the increasement/decresement of merit points provided by a particular member company, which were altered during the transactions, with referring to the data base for adjustment.

21. The system for carrying out the process of exchanging the merit points  
20 among the members in on-line system according to Claim 14, in which the member company's computer further includes a unit for carrying out an operation of input of the altered information of each members, as well as a unit for carrying out the operation of input of the generation/extinguishments of each member's merit points.

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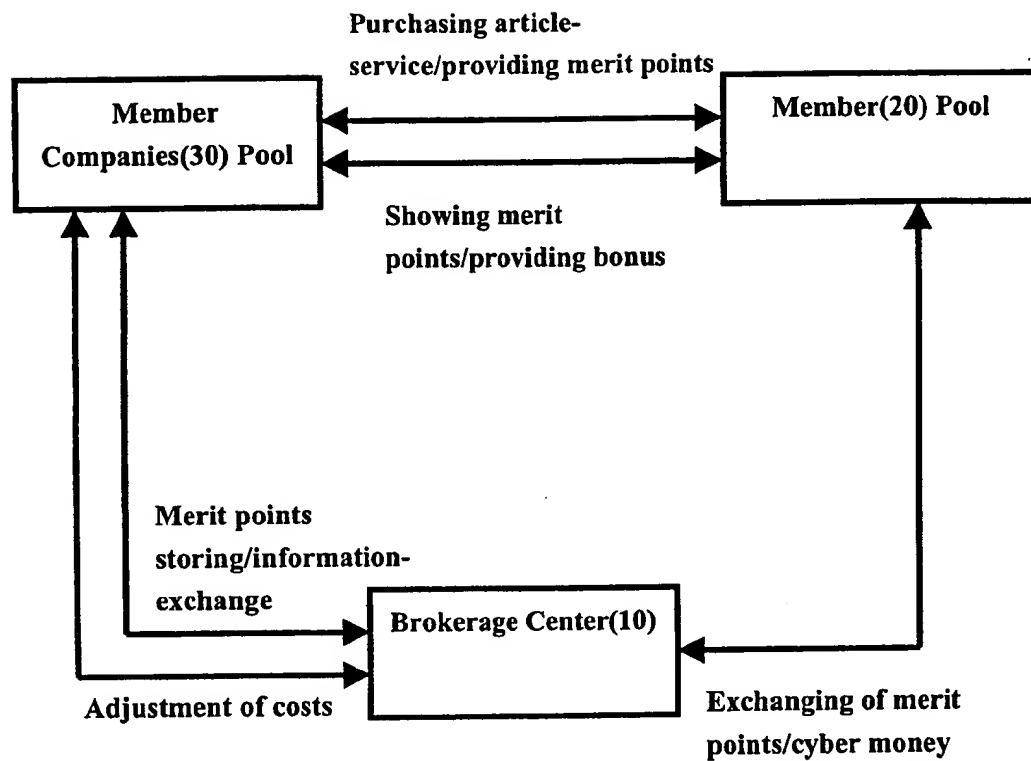


FIG. 1

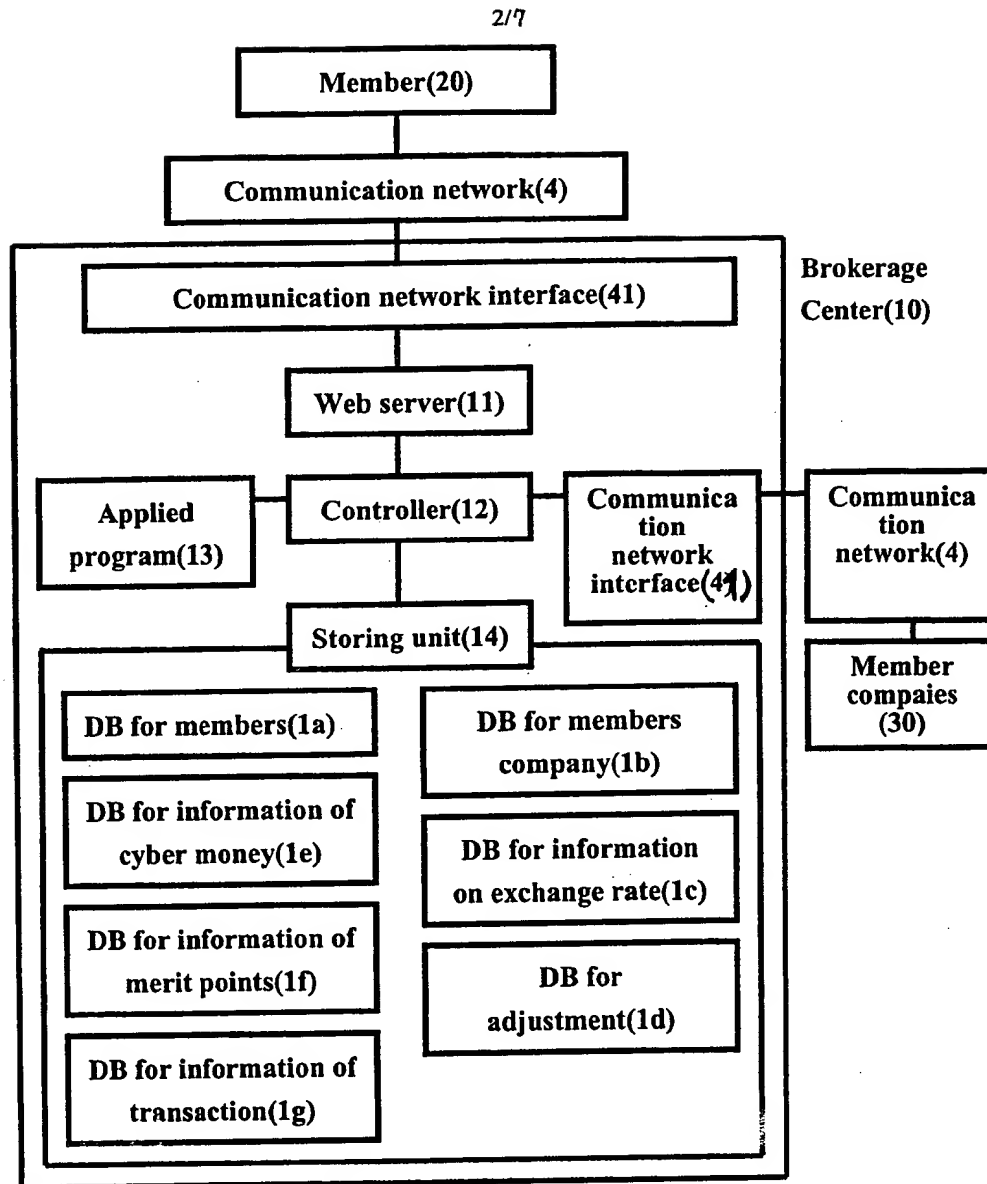


FIG. 2



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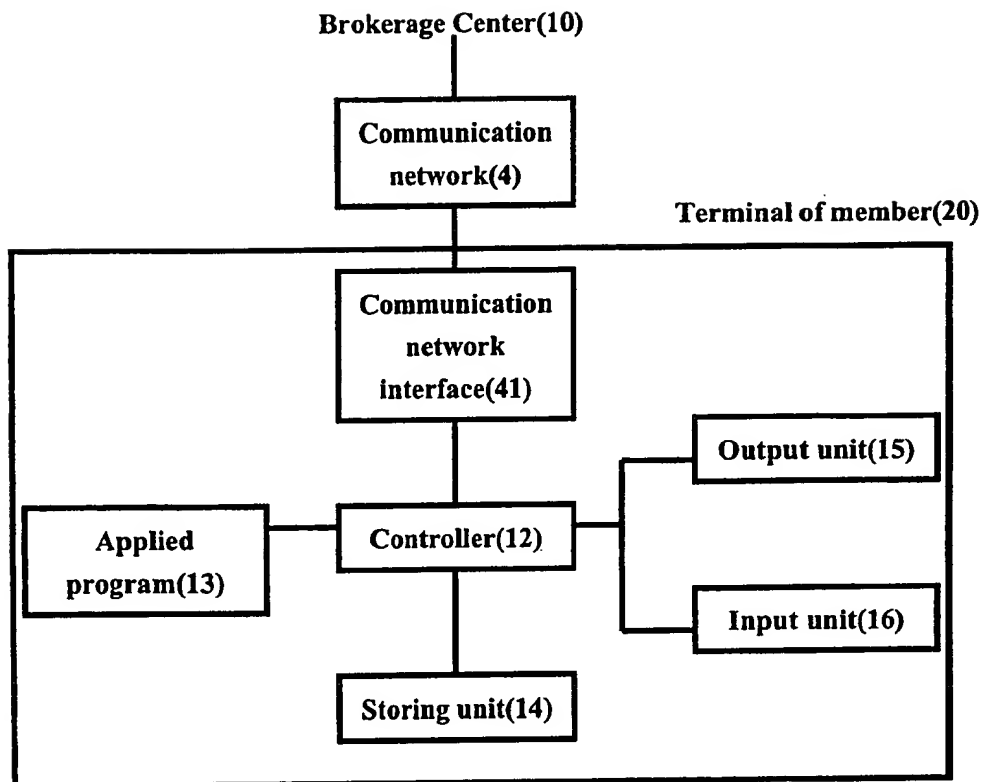


FIG. 3

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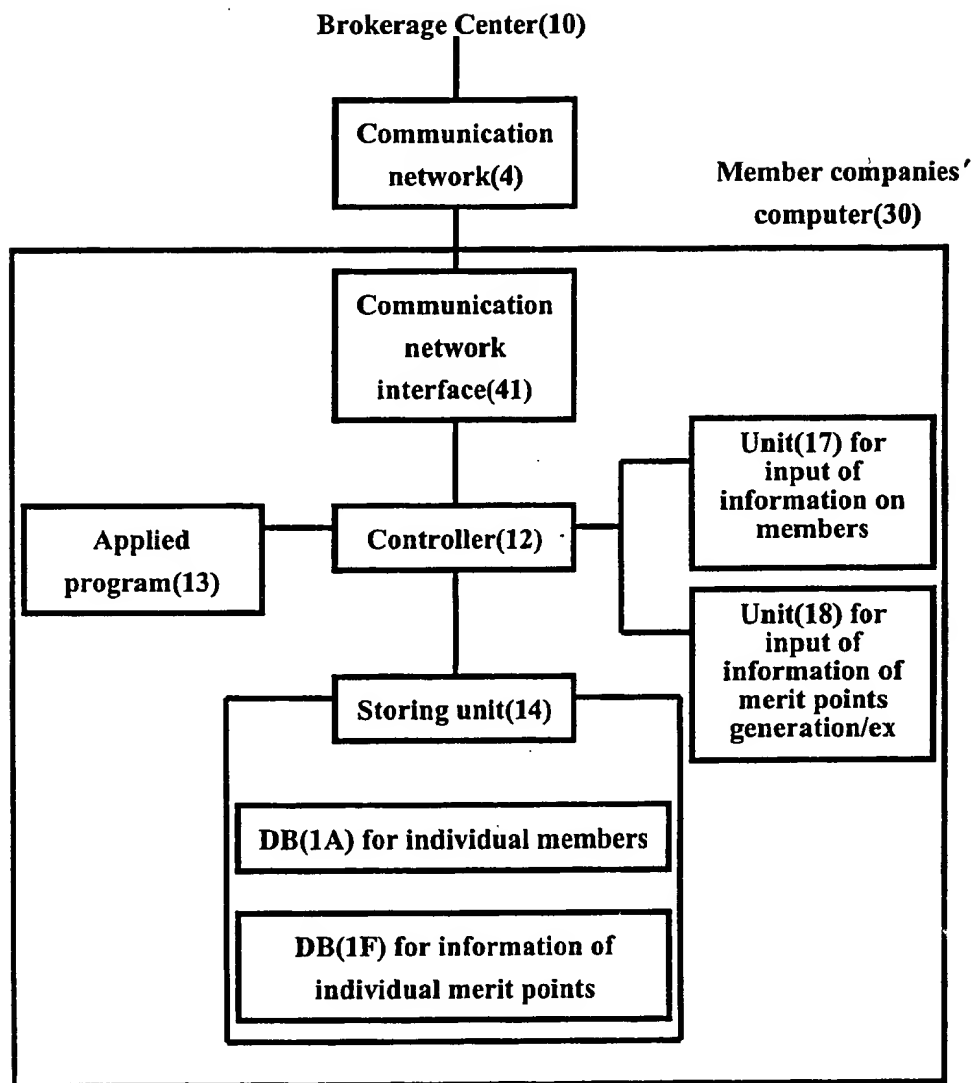


FIG. 4

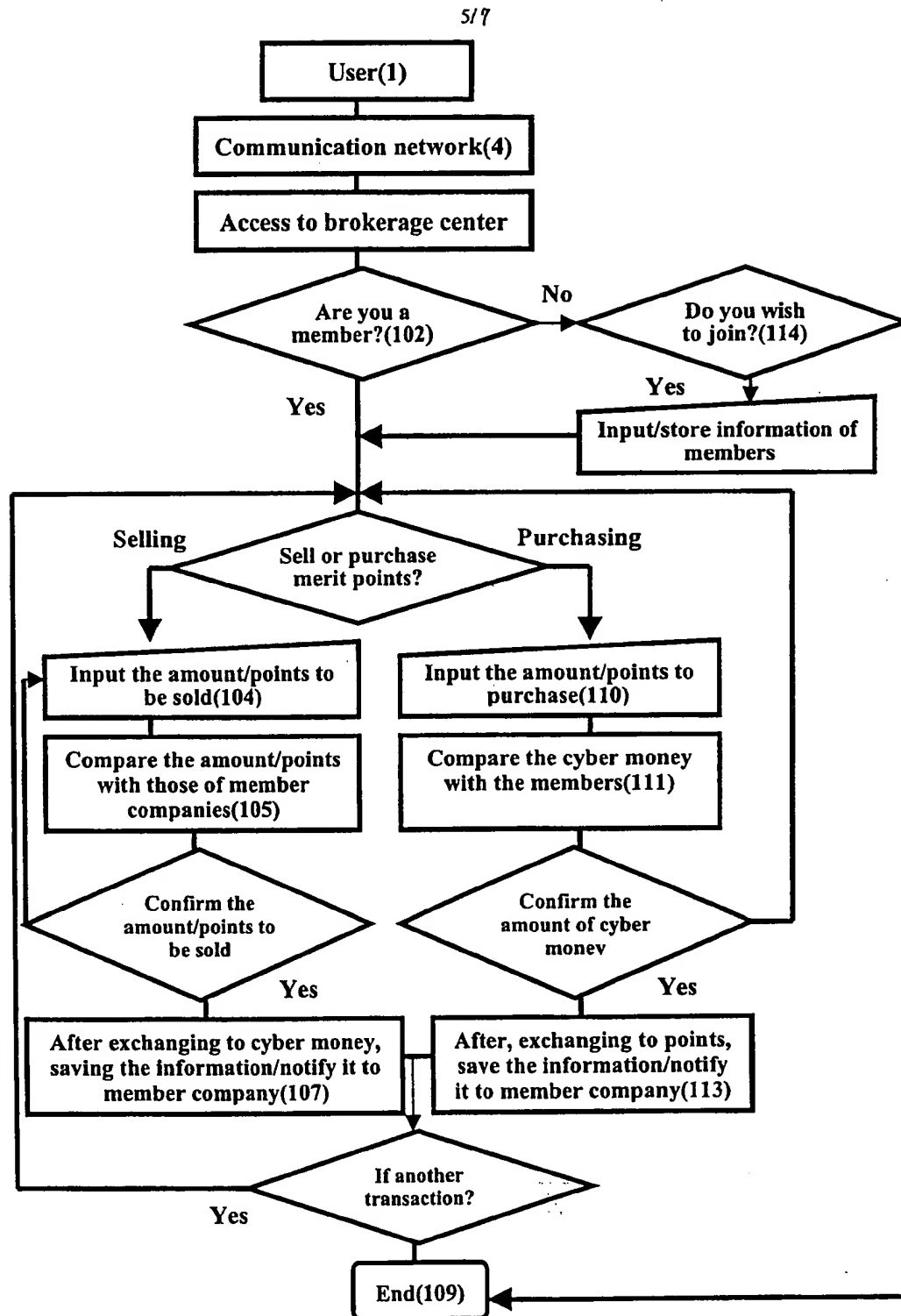


FIG. 5

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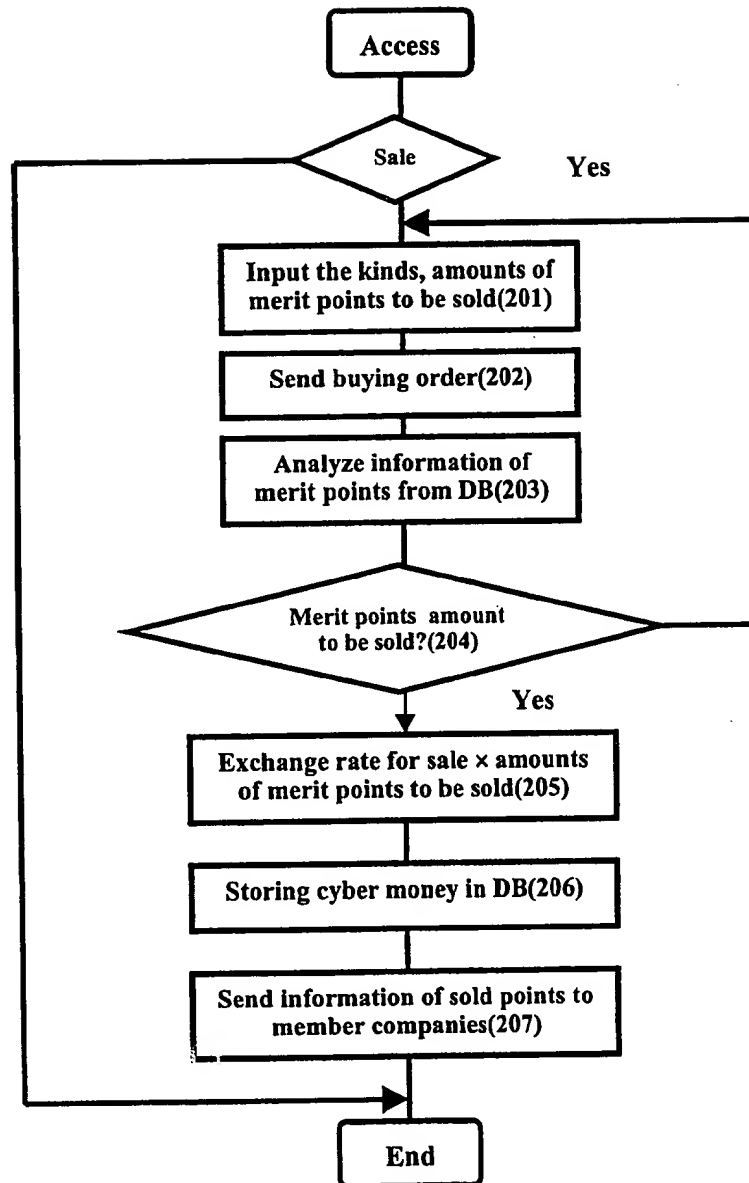


FIG. 6

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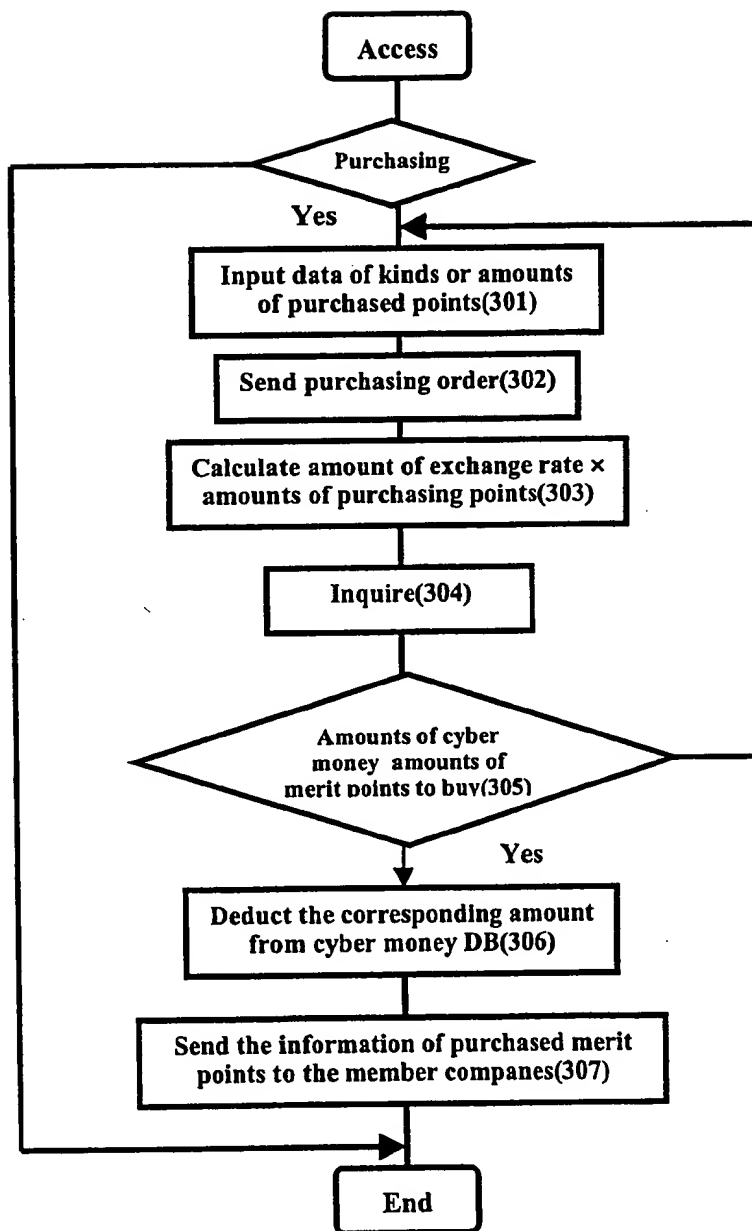


FIG. 7

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/KR00/00830

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC7 G06F 17/60

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC7 G06F 17/60, 19/00, IPC5 H04M 11/00, 3/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 09-297789 A (AIS CORP.) 18. NOVEMBER. 1997 FIG. 1-8, ABSTRACT, CLAIMS 1-6	1-21
Y	JP 10-269301 A (HITACHI CORP.) 9. OCTOBER. 1998 FIG. 1-3, ABSTRACT, CLAIMS 1	1
Y	JP 11-66193 A (HITACHI CORP.) 9. MARCH. 1999 FIG. 1-17, ABSTRACT, CLAIMS 1-9	1-21
A	JP 03-259389 A (HITACHI CORP.) 19. NOVEMBER. 1991 FIG. 1-5, ABSTRACT, CLAIMS 1-5	1-21
A	US 5,223,699 A (AT & T Bell Laboratories) 29. JUN. 1993 FIG. 1, 2, 3, 4, ABSTRACT, CLAIMS 1-8	1-21

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

\* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
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